Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies	)	ET Docket No. 92-9

COMMENTS OF THE NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

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SUMMARY

The National Telecommunications and Information Administration (NTIA) commends the Commission's efforts to balance the needs of new radio services and existing fixed microwave services by considering the availability of spectrum for emerging technologies in the 2 GHz bands. NTIA supports the general thrust of the Commission's proposals, which would provide incumbent users with financial renumeration and lengthy notice for moving their operations, in contrast to some of the Commission's past "band-clearing" actions for new technologies. Specifically, NTIA supports the Commission's market-based proposal for "negotiated reallocation" of the private sector bands around 2 GHz through private negotiations between new service users and current users.

NTIA also generally supports the Commission's proposal to establish a 10 or 15 year transition period during which both current and new users would be co-primary. Such a lengthy transition period would greatly reduce the burden of relocation on existing users. However, NTIA suggests that the Commission explore alternative proposals, under which, for example, a transition period could commence with the filing of the first application to use the spectrum in a particular region, or with a bona fide request by a licensed provider of a new service to an incumbent user to move to a higher band.

Furthermore, the concerns of the current fixed microwave users should be fully addressed by the Commission to ensure that these users can reliably operate at the higher frequencies proposed in the Notice. Currently, both government and non-government fixed microwave services operate reliably and efficiently at frequency bands above 3 GHz. However, in order to most effectively implement its proposals, it may be necessary for the Commission to undertake a further rulemaking to determine the technical rules and coordination procedures for relocation of fixed microwave users to higher bands.

Finally, NTIA is the competent authority to conduct an analysis of the use and availability of the spectrum under its jurisdiction. NTIA reemphasizes that the federal government bands around 2 GHz are highly utilized, with federal government agencies using these bands for fixed, mobile, and satellite services, for such purposes as national defense, air combat training, weather services, and law enforcement. Although it is unlikely that federal spectrum can accommodate on a wholesale basis the private sector fixed microwave users that might be relocated under the Commission's proposal, NTIA is reviewing federal government use in the 1710-1850 MHz band in order to determine whether some accommodation of current non-government users is feasible, particularly for those links that for technical reasons cannot operate reliably at higher frequencies.

NTIA will share the results of this review with the Commission, and will also continue to work with the Commission on the issues raised by this proceeding.

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The National Telecommunications and Information Administration (NTIA), as the Executive Branch agency principally responsible for the development and presentation of domestic and international telecommunications and information policy, and for management of federal use of the radio frequency spectrum, respectfully submits the following Comments in response to the Commission's Notice of Proposed Rulemaking in the above-captioned proceeding.[1/]

I. INTRODUCTION

In this proceeding, the Commission is attempting to accommodate the development of new radio services that use emerging technologies, while ensuring the efficient and reliable operation of incumbent services such as fixed microwave. NTIA commends the Commission's efforts to find spectrum for emerging

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1/ Notice of Proposed Rulemaking, 7 FCC Rcd 1542 (1992) ["Notice"].

technologies in the 1.85-1.99, 2.11-2.15 and 2.16-2.20 GHz bands (which we call the "2 GHz bands"), particularly as the vast majority of fixed microwave links in these bands are technically suited to be moved to "upper" fixed bands -- that is, those bands allocated to fixed microwave use above 3 GHz.[2/]

The Commission's Notice outlines a reasonable and balanced way of meeting the needs of current users while providing avenues for rapid development of new services. NTIA supports the Commission's market-based proposal for "negotiated reallocation" of the private sector 2 GHz bands through private negotiations between new service users and current users. Under one of the Commission's proposals in the Notice, the Commission would permit this negotiation process to continue for as long as 10 or 15 years, and then change the status of incumbent users from co-primary to secondary. NTIA supports the general thrust of the Commission's proposals, which would provide incumbent users with financial remuneration and lengthy notice for moving their operations, in contrast to some of the Commission's past "band-clearing" actions for new technologies. NTIA encourages the Commission to examine carefully all of the proposals that parties introduce into this record to accommodate new services as well as incumbent users.

2/ See Notice at 1544-1545.

Some current fixed microwave users have expressed concern that the use of frequency bands above 3 GHz would not provide fixed links of sufficient reliability due to propagation factors.[3/] In fact, federal government agencies are operating fixed microwave links in the 8 GHz band today for high-reliability uses supporting power distribution networks and many other critical uses. Private companies have extensive similar fixed links at 6 GHz. In short, with proper engineering, fixed microwave links in bands above 3 GHz can meet critical requirements in all but a very few cases where extremely long paths are needed, or where there are paths over water or unusual terrain requirements.

Some parties have also expressed concern that the rules and procedures in higher bands may not be appropriate for these microwave links. We agree that these issues need to be addressed. Therefore, in order to most effectively implement its proposals, NTIA recommends that the Commission undertake a further rulemaking to determine the technical rules and coordination procedures for relocation of fixed microwave users to higher bands.

3/ See, e.g., Petition for Rule Making, Utilities Telecommunications Council, RM-7981 (filed March 31, 1992); Petition to Suspend Proceeding, Association of American Railroads, Large Public Power Council, and the American Petroleum Institute (filed April 10, 1992).

In addition, as the manager of federal government spectrum, NTIA is reviewing federal use in the 1710-1850 MHz band in order to determine whether some accommodation of current non-government fixed microwave users is feasible, particularly for those links that for technical reasons cannot operate reliably in the higher bands. However, it is unlikely that federal spectrum can accommodate on a wholesale basis all private sector fixed microwave users that might be relocated under the Commission's proposal, given the diverse uses of spectrum by federal agencies. NTIA will share the results of this review with the Commission, and will also continue to work with the Commission on the issues raised by this proceeding.

II. NTIA SUPPORTS THE COMMISSION'S EFFORTS TO ACCOMMODATE THE DEVELOPMENT OF EMERGING TECHNOLOGIES AS WELL AS EXISTING SERVICES

The Commission proposes to make allocations for "new services,"[4/] most of which are expected to be mobile services, in the 2 GHz bands that are now used primarily for private and common carrier fixed microwave operations. Private radio operators, which include utilities, railroads, the oil and

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4/ The Notice asks for comment on the most appropriate criteria for determining the "new services." Id. at 1546. NTIA discussed possible criteria for similar types of services in its comments in the Commission's "pioneer preference" proceeding. See Comments of the National Telecommunications and Information Administration in Gen. Docket No. 90-217, Establishment of Procedures to Provide Preference to Applicants Proposing an Allocation for New Services, at 7 (filed June 29, 1990). We believe that those recommended criteria, as well as the Commission's experience from that proceeding, will provide adequate guidance in devising such criteria.

manufacturing industries, and state and local government entities, use this spectrum for a variety of critical operations. The services provided by these users are extremely important, and their needs must continue to be met.

NTIA agrees with the Commission that new services such as personal communications services (PCS), wireless PBXs (private switchboards), wireless data networks, mobile satellite services, and low-Earth orbit satellites, should have access to spectrum for their operations. As the Notice points out, requests to the Commission for spectrum for such services total almost 400 MHz.[5/] Development of these new services and the new industries that they will spawn should be a major long-term policy goal of the United States. Their development could translate into better services for consumers, economic growth, more jobs, and increased international competitiveness. Delay in the implementation of successful new services could cost the U.S. economy billions of dollars.[6/]

Other countries have recognized the potential value of new services. At the recent World Administrative Radio Conference

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5/ See Notice at 1543.

6/ A recent study estimated that the decade-long delay in licensing cellular telephone service in this country cost the U.S. economy more than $86 billion. J.H. Rohlfs, C.L. Jackson, and T. E. Kelly, Estimate of the Loss to the United States Caused by the FCC's Delay in Licensing Cellular Telecommunications (National Economic Research Associates, 1991).

held in Spain in February 1992 (WARC-92), the participating countries identified spectrum in the 2 GHz range for use by new, emerging technologies.[7] As the Commission states in the Notice, Europe and Japan have already moved to allocate spectrum in the 2 GHz bands for new technologies.

Notwithstanding the promise of the services potentially available through emerging technologies, the Commission rightly recognizes the importance of many of the incumbent uses in the 2 GHz region.[8] NTIA fully appreciates the difficult balancing that the Commission has undertaken in attempting to meet the needs of incumbent and prospective users of these frequencies. However, there are sound technical reasons for locating mobile services, such as PCS and many of the other proposed "new services," at 2 GHz while moving fixed microwave users to higher frequencies. Because mobile services would experience greater propagation losses when operating at higher bands, they must increase transmitter power and may have to use advanced solid-state technologies in order to compensate for such losses. Increased power translates into heavier and bulkier power

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7/ Final Acts of the World Administrative Radio Conference (WARC-92) (Malaga-Torremolinos, 1992), Addendum and Corrigendum, Resolution COM 4/4, Implementation of Future Public Land Mobile Telecommunication Systems (FPLMTS). See also, footnote 746A, which identified the 1885-2025 MHz and 2110-2200 MHz bands for FPLMTS.

8/ Notice at 1544. ("The private and common carrier fixed microwave services operating in these bands provide important and essential services.")

supplies -- in other words, bigger batteries and less portability for mobile radios. In contrast, fixed microwave users can compensate more readily for greater power requirements because they connect directly into a power system, and the vast majority of such users can thus operate reliably and efficiently in higher bands. Currently, fixed systems operate in bands near 4, 6, and 8 GHz, and some operate as high as 20 GHz and beyond, without encountering difficulties.

The Commission's task in this proceeding, therefore, is to reconcile the promise of new services with the needs of existing spectrum users, given technical constraints. Although NTIA agrees that relocation of fixed microwave users to higher frequencies is the best way to resolve this question, the Commission should choose a mechanism that minimizes any burden imposed on incumbent users for relocating from their present frequencies. The Commission should also ensure that rules are in place so that any spectrum made available in other bands to current users permits them to provide reliable service with a minimum of technical and regulatory burdens. In light of these concerns, NTIA recommends that the Commission carefully weigh all of the proposals in the record it obtains in this proceeding.

III. THE COMMISSION'S NEGOTIATED REALLOCATION PROPOSAL BEST BALANCES THE DEVELOPMENT OF EMERGING TECHNOLOGIES AND THE PROVISION OF EXISTING SERVICES

A. "Negotiated Reallocation," As Described in the Notice, Can Benefit Licensees in Both Existing and New Services

The Commission's proposal to permit licensees of new services in the 2 GHz bands to negotiate voluntarily with existing spectrum users for the right to operate on the same spectrum on a primary basis (which we call "negotiated reallocation") is an innovative and desirable way to meet future needs of new service users as well as the important current needs of incumbents. This proposal would harness a powerful mechanism -- use of the market -- to address a fundamental issue of spectrum management: how to value competing uses for the same scarce resource.

In 1991, NTIA addressed such policy issues in its report, U.S. Spectrum Management Policy: Agenda for the Future.[9/] Among other things, NTIA found that increasing "user flexibility," by giving licensees greater flexibility to determine the use of a particular portion of the spectrum, "would . . . introduce the basis for workable market mechanisms that could maximize efficient use of spectrum."[10/] NTIA also recommended that "the

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9/ National Telecommunications and Information Administration, U.S. Dep't of Commerce, Spec. Pub. 91-23, U.S. Spectrum Management Policy: Agenda for the Future (Feb. 1991) ["NTIA Spectrum Report"].

10/ Id. at 79.

FCC should permit users to exercise greater flexibility to transfer or 'alienate' their spectrum licenses . . ." in user-to-user transactions, subject to the provisions of the Communications Act of 1934.[11/]

The Commission's negotiated reallocation mechanism is consistent with the recommendations of the NTIA Spectrum Report. The Commission proposes to permit parties that will be licensed to operate new services in the 2 GHz bands to negotiate with existing users for access to their 2 GHz spectrum, while also permitting existing users the right to negotiate for continued access to that spectrum.[12/] For example, a party with a license to provide a new telecommunications service using currently occupied spectrum could negotiate with that current user to begin immediate operation in exchange for a mutually acceptable payment. The actual amount paid by the new user to the existing user could vary, presumably depending on the geographic location of the spectrum, the extent of use by the current service, whether sharing is feasible, and the projected demand for the new service.

11/ Id. at 115. See also id. at 118.

12/ Notice at 1545. The Commission had raised the idea for negotiated spectrum reallocation in the context of its PCS inquiry. See Amendment of the Commission's Rules to Establish New Personal Communications Services, Notice of Inquiry, 5 FCC Rcd 3995, 3998 (1990).

The private negotiation approach would help create a win-win situation. Current users would win because a mechanism would exist for them to receive payment for moving their operations, thereby recovering at least their relocation costs, and perhaps more. Potential new service providers would win because a mechanism would exist to allow them to operate on spectrum now occupied by other users without necessarily waiting for completion of a government-mandated transition period. The actual terms of the negotiation would be determined by the parties themselves, and thus could vary depending on the parties' circumstances. The license itself, however, would still be subject to terms and conditions imposed by the Commission pursuant to the Communications Act.

As another component of its negotiated reallocation proposal, the Commission proposes to allow existing services in the 2 GHz region, other than those for which state and local governments have licenses,[13/] to share co-primary status with new service licensees for a transition period, during which the voluntary negotiations discussed above would take place. The Commission suggests a period of 10 or 15 years.[14/] Any new applications for fixed microwave uses in the 2 GHz spectrum bands

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13/ Such users would retain co-primary status indefinitely.

14/ The Commission has determined that the usual depreciation time for microwave equipment is 10 years, and that such equipment actually remains in service for approximately 15 years. See Notice at 1545.

would be granted on a secondary basis. After the transition period, currently licensed 2 GHz fixed services could continue to operate, but only on a secondary basis, relocate without compensation, or negotiate with the primary service user for continued access to the spectrum.

The Commission also asks for comment on alternatives to this transition period, including whether such a time limit on co-primary status is needed.[15/] NTIA recommends that incumbent users should be able to negotiate with prospective users for continued operation in the 2 GHz bands even after the end of any transition period. The Notice suggests that under the proposal for a 10 or 15 year transition period, fixed users could continue to use their current spectrum despite their nominal "secondary" status if they so negotiate with any affected new service users, even if those new users have nominal "primary" status.[16/] NTIA recommends that the Commission clarify that this would be the case.

The Commission's proposal for a transition period of at least 10 years has much to recommend it. Such a lengthy transition period would greatly reduce the burden of relocation

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15/ Id. at 1546.

16/ Of course, even after a license becomes secondary, a fixed user could continue to operate if it does not interfere with a primary licensee. This may actually be the situation in many cases.

on existing users. In effect, no current user would be required to relocate to higher frequencies any earlier than the time in which it would likely be purchasing replacement equipment. This would substantially reduce the costs associated with relocation. Because off-the-shelf equipment that operates at the higher frequencies has already been developed and is available for the relocated users, there would in many cases be little actual increase in cost if a current user moved to a higher band under this approach. Moreover, if, as we recommend, existing users are able to negotiate for continued access after the transition period to the 2 GHz bands in exchange for a payment to the new user, they will do so if the payment is less than the cost of relocating.

Although we understand the arguments supporting a "transition" period of indefinite duration, NTIA does not favor allowing current users to remain co-primary with new users for an indefinite period of time. Such an approach would not necessarily provide the spectrum needed for new services to develop fully. Despite its name, "co-primary" status between new and existing services does not appear to mean that the new services are placed on an equal footing with existing fixed microwave services. As a practical matter, the existing users, being located first in time in the 2 GHz bands, presumably would

have priority in continuing to operate as before.[17] Thus, even under a co-primary allocation, new services that, for technical reasons, could only be located in the 2 GHz bands, would have the burden of finding spectrum on which to operate, through careful engineering in some areas and through negotiations with current users in others. Although some new services will be able, for technical reasons or through negotiation, to share frequencies with existing fixed services in the same geographic areas,[18] the Commission should not assume that this will be possible for all new services, many of which have not yet been defined or developed.

A transition period may also be necessary because the Commission's negotiated reallocation plan will not operate in a perfect "free market" for spectrum. Because of the technical factors discussed above, new services largely will be limited to obtaining spectrum in the 2 GHz bands; because of practical regulatory factors, a new licensee likely will be limited to a

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17/ The Commission should be specific in defining "co-primary" status in this context.

18/ Some proponents of PCS claim that, at least for an initial start-up period, some implementations of PCS would be able to share spectrum with existing users. See Frequency Agile Sharing Technology ("FAST") Report on Spectrum Sharing in the 1850-1990 MHz Band Between Personal Communications Services and Private Operational Fixed Microwave Service (Volume 1) at 1 (American Personal Communications, July 1991). However, because several implementations of PCS are currently being tested, we believe that the Commission should not tailor its decision in this proceeding to the technical specifications of any particular PCS design.

particular set of frequencies within those bands. In these circumstances, existing users could, in effect, have monopoly-like control over access to spectrum that may be critical to the new users, a situation that could make negotiations with new users more difficult. In some cases, an existing user operating on spectrum of extreme importance to a new user might choose to "hold out" in an attempt to extract all the economic value of the new license. In other cases, an existing user might choose to simply not negotiate,[19/] thus limiting or prohibiting the development of the new service. A new licensee would not have the option -- in the face of a recalcitrant incumbent user -- to move its operations to another spectrum band, an option available if there were a broad competitive market for spectrum.

A transition period would provide a carrot-and-stick approach to encourage negotiations -- the current user stands to be compensated financially by participating in negotiations during the transition period, but without such negotiation would face secondary status after that period. Because the incumbents' licenses in the 2 GHz bands are for no longer than 10 years,[20/] a

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19/ Because some of the current users are utilities regulated on a rate-of-return basis, it is not clear that they would be able to benefit financially from selling their rights to spectrum, thus reducing substantially their incentives to negotiate.

20/ See, e.g., 47 C.F.R. § 21.45 (maximum 10 year license period for domestic fixed public radio services); id., § 94.39 (maximum five year license period for private operations-fixed microwave service).

lengthy transition period of 10 or more years would not impinge on the rights of existing licensees.

Finally, an express transition period would also send a distinct signal to developers and suppliers of new services that spectrum will be available in an orderly fashion. In doing so, it would provide added incentives and benefits to the developers of such services and associated equipment that would help justify their outlays of capital. Moreover, because we believe that such a signal could help lead to the development of PCS as a source of competition to local exchange and cellular service providers,[21/] we wish to note the substantial public benefits that would result from such competition. These benefits include not only the lower prices and increased choice that would accrue to consumers from such competition, but the benefits to the public from being able to eliminate many of the current restrictions on the activities of telecommunications firms (such as the cable-telephone crossownership rules and restrictions in the AT&T consent decree) that, when enacted, were based on concerns about the exercise of market power in the local exchange.[22/] These public benefits from making spectrum available for PCS and other new services

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21/ We recognize that the Commission must resolve numerous issues other than the availability of spectrum in order for such competition, even by PCS, to develop fully.

22/ There now is a general consensus that greater competition in local exchange services would provide the best way to resolve many of the contentious issues that are affecting the development of the telecommunications industry.

would not be directly realized by the PCS provider and might not be fully reflected in negotiations.

Under the Commission's proposal, the transition period apparently would begin to run from the date the Commission adopts the new rules. It could be possible, however, that the transition period for users to relocate not begin to run until there is an applicant seeking to use the spectrum for new technologies. It is not difficult to imagine a scenario in which demand by new service licensees for spectrum in certain areas may never occur, or will occur in the far distant future. The Commission should explore alternative proposals, under which, for example, a transition period could commence with the filing of the first application to use the spectrum in a particular region, or with a bona fide request by a licensed provider of a new service to an incumbent user to move to a higher band, subject to reimbursement of full relocation costs.[23/]

B. The Commission Should Commence a Further Rulemaking to Develop Technical Rules and Coordination Procedures for Spectrum Made Available to Relocated Users

The proposals in the Notice currently lack the level of precision needed to ensure that existing users can operate easily

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23/ Under this scenario, the transition period should probably be less than 10 or 15 years, since the scenario apparently assumes the presence of an actual licensed provider preparing to offer service, coupled with an offer to pay all relocation costs of the incumbent user.

and efficiently in the higher frequency bands to which they would relocate.[24/] Therefore, NTIA suggests that the Commission move expeditiously to adopt rules to resolve the issues presented thus far in the Notice, while also releasing a further notice of proposed rulemaking to address technical rules and coordination procedures for the relocation of fixed microwave users to the higher bands discussed by the Commission.[25/]

IV. NTIA WILL WORK WITH THE COMMISSION TO DETERMINE THE DEGREE TO WHICH FEDERAL GOVERNMENT SPECTRUM CAN BE USED TO SUPPORT THIS INITIATIVE

In the Notice, the Commission asks for comments on the availability or suitability of government spectrum for relocation of existing commercial operations in the 2 GHz bands.[26/] Various parties have already filed petitions and comments in this proceeding urging the Commission to examine government bands for accommodation of emerging technologies or relocation of existing

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24/ The Utilities Telecommunications Council and Alcatel Network Systems, Inc. have filed separate Petitions for Rule Making urging the Commission to act expeditiously to adopt specific rules to ensure the efficient operations of the current fixed microwave users when they relocate to new bands after negotiated reallocation. Petition for Rule Making, Utilities Telecommunications Council, RM-7981, at 3-12 (filed March 31, 1992); Petition for Rule Making, Alcatel Network Systems, Inc., RM-8004, at 2-5 (filed May 22, 1992).

25/ We are encouraged that the members of the Commission have expressed their willingness to issue further notices of proposed rulemaking in this proceeding "where necessary to address significant technical or operational issues. . . ." Letter from the FCC Commissioners to Senator Ernest F. Hollings (April 20, 1992).

26/ Notice at 1546.

users.[27/] However, as NTIA has stated previously in this proceeding,[28/] NTIA is the competent authority for an analysis of the use and availability of spectrum under its jurisdiction.

Although efforts have been made outside of this proceeding to make government spectrum available to the Commission for assignment to private sector users,[29/] the Commission has chosen not to consider any such spectrum for allocation in this proceeding because of the uncertainties involved.[30/] NTIA agrees that this is the most practical approach. The Commission should seek to implement its negotiated reallocation program, as discussed above. At the same time, NTIA will work closely with the Commission to address the valid needs of current fixed microwave users that cannot operate reliably at higher frequency bands.[31/]

27/ See, e.g., Petitions, supra note 3; Opposition to Petition to Suspend Proceeding, American Personal Communications (filed April 20, 1992); and Opposition to Petition to Suspend Proceeding, Time Warner Telecommunications Inc. (filed April 23, 1992).

28/ Letter from Thomas J. Sugrue, Acting Assistant Secretary, NTIA, to Alfred C. Sikes, Chairman, FCC (May 4, 1992).

29/ See Emerging Telecommunications Technologies Act of 1991, S. 218, H.R. 531 and H.R. 1407, 102d Cong., 1st Sess. (1991).

30/ See Notice at 1547, n.11.

31/ NTIA has authority to assign frequencies to federal government spectrum users as provided by Exec. Order No. 12,046, as amended, 3 C.F.R. 158 (1978), reprinted in 47 U.S.C. § 305 app. at 127, and Department of Commerce Organization Order 10-10, as amended (May 9, 1979). Thus, NTIA's ex parte communications with the Commission and its staff on issues involving such spectrum are exempt from the Commission's prohibitions and

Federal government spectrum in the 2 GHz bands is actively used for a large number of services, and the federal government investment in these bands exceeds $10 billion. As NTIA has already explained to the Commission, the number of transmitters in the federal government 2 GHz bands is substantially greater than the number of non-government facilities in the adjacent non-government bands of the same size.[32/] Unlike the non-government 2 GHz bands, the government 2 GHz bands at issue in this proceeding are not devoted to a single use, such as fixed microwave service. These government bands accommodate a wide variety of uses, including mobile and satellite services, as well as fixed microwave services, for purposes of national defense, power distribution, resource management, safety, law enforcement, control of military and weather satellites, air combat training, and military area-wide command and control systems. Because of the number and diversity of services in these federal government bands, the difficulty of sharing the spectrum with non-government users is increased.

Other uses of the federal government 1710-1850 MHz band place constraints on the number of assignments that can be made. There are areas, such as Southern California and the Southwest, where relatively little spectrum for fixed assignments is available because of extensive airborne uses. Transmit and

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requirements regarding such contacts, 47 C.F.R. § 1.1204(b)(5).

32/ See supra note 28.

receive separation requirements also place constraints on assignments for federal mobile services within the government 2 GHz bands. Because of these and other technical limitations, moving operations such as satellite command and control and mobile operations from these bands would not be practical.

Classified uses in the government 2 GHz bands are also important, and such uses are not included in calculations of government utilization of these frequencies.[33/] Moreover, the government band at 2200-2290 MHz is not available for commercial use due to national security reasons.[34/]

It may be possible to "engineer" some private fixed microwave links into the 1710-1850 MHz band, particularly those that, because of long distances, cannot be operated reliably in the higher frequency bands. Although a thorough review of the usage of these government 2 GHz bands is a complex process that will take time, NTIA has begun such a review and will be working with the federal agencies that have operations in these bands to determine whether some sort of accommodation of the commercial

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33/ See, e.g., NTIA draft report Federal Spectrum Usage of the 1710-1850 and 2200-2290 MHz Bands, on file at the Commission in ET Docket No. 92-9.

34/ See Letter from William D. Gamble, Deputy Associate Administrator, Office of Spectrum Management, NTIA, to William Torak, Deputy Chief, Spectrum Management Division, FCC (July 22, 1985), citing Secretary of Defense Weinberger's notification to Secretary of Commerce Baldrige that the use of the frequency band 2200-2290 MHz by non-government entities would be detrimental to U.S. national security interests.